



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/020,837	12/13/2001	Stephen Andreas Grot	GROT-2 II	1868

7590

09/10/2003

HUNTLEY & ASSOCIATES
1105 N. MARKER ST.
P.O. BOX 948
WILMINGTON, DE 19899-0948

EXAMINER

BELL, BRUCE F

ART UNIT	PAPER NUMBER
----------	--------------

1746

DATE MAILED: 09/10/2003

4

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/020,837

Applicant(s)

GROT, STEPHEN ANDREAS

Examiner

Bruce F. Bell

Art Unit

1746

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,2 and 4-12 is/are rejected.
- 7) ☒ Claim(s) 3 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 13 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 5, 6, 9 and 10-12 are rejected under 35 U.S.C. 102(b) as being anticipated by Uchida et al (5474857).

Uchida et al disclosed a solid polymer fuel cell having an electrode 50 formed of fine catalyst powders 52 and carbon powders 53, and solid polymer electrolyte 11 which are formed by preparing a colloidal dispersion and coating the dispersion on a gas diffusion layer and attaching the entire structure to the SPE 11 to form the fuel cell structure. See col. 3, lines 45-55 and col. 4, lines 1-26 and 42-50. See Figures 2 and 3.

The prior art of Uchida et al anticipates the applicants instant invention as set forth above. It appears to the examiner that the gas diffusion layer is the base of the electrode and that the colloidal dispersion is the coating onto the base which the entire structure is attached to the SPE. Since the SPE material is used in both the membrane and the electrode and Nafion which is the SPE material is known for its oxygen and hydrogen transport properties is used in the dispersion, it appears that the applicants instant invention has been anticipated.

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(e) the invention was described in-

(1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effect under this subsection of a national application published under section 122(b) only if the international application designating the United States was published under Article 21(2)(a) of such treaty in the English language; or
(2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that a patent shall not be deemed filed in the United States for the purposes of this subsection based on the filing of an international application filed under the treaty defined in section 351(a).

4. Claims 1, 2, 5, 6, 9 and 10-12 are rejected under 35 U.S.C. 102(e) as being anticipated by Kato (6,054,230).

Kato discloses a fuel cell assembly wherein catalyst materials and solid polymer ion exchange materials are combined for surface coating an electrode structure. The catalyst materials are dispersed in solvents such as PTFE and perfluoro ethers to enhance the water repellency in the electrode structure. See col. 6, lines 21-33 and abstract.

Kato anticipates the applicants instant invention as set forth above.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the

Art Unit: 1746

subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 7 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kato (6054230) or Uchida et al (5474857) in combination with Okada et al (4943496).

Kato or Uchida et al are as disclosed above in the 35 USC 102 rejections above.

Neither Kato or Uchida et al disclose the use of silicone oil or polydimethylsiloxane as the material used for the oxygen or hydrogen transport material as the coating on the electrode base.

Okada et al shows that a water repellant material is coated onto an electrode plate and is one of PTFE, silicone oil or polydimethylsiloxane as well as other materials. See col. 4, lines 4-20.

The subject matter as a whole would have been obvious to one having ordinary skill in the art at the time the instant invention was made because even though the prior art of Kato or Uchida et al do not teach the use of this specific material in the making of an electrode for a fuel cell, it is shown in these arts that PTFE and polyfluoro ethers are known to be used and that in the prior art of Okada et al it shows that the use of these materials as alternatives for one another in their use for water repellency is within the ability of the skilled artisan. Therefore to substitute one for another in the art as art recognized equivalents is also known to the person having ordinary skill in the art.

Allowable Subject Matter

7. Claim 3 is allowable over the prior art of record.

8. The following is a statement of reasons for the indication of allowable subject matter:

The prior art of record fails to teach a perfluoro ether of the formula set forth in the claims having "n" be between 10 and 60.

9. Claim 3 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Bruce F. Bell whose telephone number is 703-308-2527. The examiner can normally be reached on Monday-Friday 6:30 AM - 3:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Randy Gulakowski can be reached on 703-308-4333. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Application/Control Number: 10/020,837

Page 6

Art Unit: 1746

BFB

September 8, 2003

A handwritten signature in cursive script that reads "Bruce Bell".

Bruce F. Bell
Primary Examiner
Art Unit 1746